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SOCIETY OF ARTS.

FRIDAY, JUNE 17th, 1853.

DISTRIBUTION OF MEDALS AND PREMIUMS.

Friday, June 10th, 1853.

THE Distribution of Prizes, adjudged by the Society during the past Session, took place on Friday, the 10th inst.; His Royal Highness PRINCE ALBERT, K.G., President, in the Chair.

His Royal Highness PRINCE ALBERT having taken the Chair, rose and said: Ladies and Gentlemen,—Three years have elapsed since this Society last distributed its Medals and Honorary Awards for Inventions. The interruption which has taken place is owing to the Great Exhibition of 1851, the excitement which it produced, and the large share of public attention which it claimed. This Society has taken such an honourable part in that great event that it need not be ashamed to refer to it. I hope that you will be convinced, from the works and inventions which will be brought before you to-day, that the inventive genius and skill of this country is still making most rapid strides. I shall now call upon the Secretary to read the Report.

The SECRETARY then read the following Report:

Since the last General Meeting of the Society for the Distribution of Premiums, three years have elapsed, and this period has certainly not been the least eventful portion of the history of the Society, whether the subjects which have occupied the attention of the whole body, or the exertions of its individual members, are considered. If there were no other circumstances to chronicle than those which relate to the part taken by the Society, in connection with the Great Exhibition, there would be much connected with the industrial progress of the world to record; and everything belonging to the history of that great event has a new and ever-growing importance, when taken in connection with the rapidly-developing spirit of international co-operation, of which it was, in truth, the first illustration. The share which this Society had in promoting the Great Exhibition, will be recorded in the history of our country; it is known to all, and, in truth, it would hardly be necessary now to refer to it, were it not that several of the Prizes about to be awarded relate directly to that event; and, further, that the varied and important services connected with it, which for nearly ten years have occupied many of our most active members, have to a considerable extent interfered with and modified the Prize Lists of the last three years. In the year 1851 the ordinary Prize List of the Society was altogether suspended, and in place of it special Premiums, connected wholly with the Exhibition, were offered. It must not be supposed, however, that in consequence of the time and attention thus devoted to these particular subjects, that the other branches of the Society's operations have been abandoned or neglected; on the contrary, it is probable than in no three years of the last century has the Society done more to

advance the true interests of the Arts, Manufactures, and Commerce of the country, than in the three last Sessions. This is not the time to enumerate the good works which the Society has undertaken or carried out; yet it is right that I should remind you of them, and that I should observe, that if a smaller number of Prizes are now given than used to be the case, it is not because the Society is less able or less willing than it was formerly to reward merit, but because, from the altered spirit of the times, the encouragement and aid of the Society is less needed as a means of bringing forth isolated inventions and dormant talents, and is more urgently needed in the development of enlarged generalizations and comprehensive measures.

The SECRETARY then proceeded to read the List of Awards, briefly describing the subjects for which the several Premiums were given.

1. To Mr. Joshua Rogers, of 133, Bunhill-row, for his Shilling Box of Water-colours—the Silver Medal.
2. To Mr. John Cronmire, 10, Cottage-lane, Commercial-road East, for his Half-crown Box of Mathematical Instruments—the Silver Medal.
3. To Mr. James Taylor, of Elgin, for his Essay on the Cotton Manufactures of India—the Isis Medal.
4. To Mr. Henry Weekes, A.R.A., for his Essay on the Fine Arts Department of the Great Exhibition—the Silver Medal.
5. To Mr. F. C. Bakewell, for his Essay on the Machinery of the Great Exhibition—the Silver Medal.
6. To Dr. Robinson, of Newcastle, for his Improved Safety-lamp for Miners—the Thanks of the Society.
7. To Mr. R. G. Salter, for his Method of Flushing Sewers—the Silver Medal.
8. To Mr. Jonas Bateman, for his Improved Life-boat—the Thanks of the Society.
9. To Mr. William Clerichew, of Ceylon, for his Improvements in the Curing of Coffee—the Isis Gold Medal.
10. To Mr. W. Vaughan, of Maidstone, for his Machine for putting together Chimney-pieces—the Silver Medal.
11. To Admiral Sir Henry Hart, of Greenwich, for his Mode of curing Smoky Chimneys—the Isis Medal.
12. To Mr. J. Rock, jun., of Hastings, for his new Carriage-spring—the Isis Medal.
13. To Dr. Stolle, of Berlin, for his Essay on the Manufacture of Sugar—the Thanks of the Society.
14. To Dr. Cumin, of Bath, for his Specimens of Paper from Sugar-cane Refuse—the Thanks of the Society.
15. To Mr. W. Bollaert, for his Essay on the Use and Preparation of Salt—the Society's Medal.
16. To Mr. H. Owen Huskisson, for his Essay on the Use and Preparation of Salt—the Society's Medal.
17. To Mr. John Dalton, of Hollingworth, for his Double register Machine for Printing calico—the Society's Medal.
18. To Mr. G. Scholes, of Landport, for his slide-motion Indicator—the Society's Medal.
19. To Mr. G. Edwards, for his Improved Portable Photographic Camera—the Society's Medal.
20. To Mr. J. Toynbee, F.R.S., for his Artificial Membrana Tympani—the Society's Medal.
21. To Mr. W. Wood, for his Improved Mode of Teaching Music to the Blind—the Society's Medal.

22. To Mr. A. Claudet, for his Essay on the Stereoscope, and its applications to Photography—the Society's Medal.
23. To Mr. Joseph Hopkins, of Worcester, for his Mode of giving Equatorial Motion to Telescopes—the Society's Medal.
24. To Mr. G. Jennings, for his Improvements connected with the Drainage of Houses—the Society's Medal.
25. To Mr. H. J. Saxby, of Miletown, Sheerness, for his Lock—the Society's Medal and 10*l*.
26. To Mrs. A. Thomson, of New Bond-street, for Four Drawings in Outline—the Society's Medal.
27. To Mr. W. Stones, of Queenhithe, for his Essay on the Manufacture of Paper—the Society's Medal.
28. To Mr. C. Shepherd, jun., of Leadenhall-street, for his Improvements in Electric Clocks—the Society's Medal.
29. To the Rev. W. T. Kingsley, of Cambridge, for his Discoveries in Photography—the Society's Medal.
30. To the Very Rev. the Dean of Hereford, for his Essay on Self-supporting Schools—the Society's Medal.
31. To Dr. Lloyd, of Warwick, for his Samples of Paper made from the Refuse of Cow-houses—the Thanks of the Society.
32. To Professor Jack, of New Brunswick, for his Essay on the Decimal System of Weights and Measures—the Thanks of the Society.
33. To Mr. James Holt, of Leeds, for his Essay on the History and Management of Literary, Scientific, and Mechanics' Institutions—the Society's Medal and 50*l*.

THE MARQUIS OF LANSDOWNE then rose, and said: Ladies and Gentlemen,—I propose to detain you but a very few moments in asking you to concur with me in what I am about to suggest. I wish to propose to you, that you do that which I am sure will be your unanimous wish to do: that you vote your thanks to His Royal Highness for attending here this day, and for his conduct in the chair. (Applause.) In proposing this vote, I do not propose it, as I think you would not vote it, in respect only of that high situation—the highest which a subject can enjoy—in which His Royal Highness is placed in this country; but more especially you will do it on this occasion, on account of the position he occupies in your chair. (Applause.) This is not the place for me to enumerate, in His Royal Highness's presence, the many virtues which are known to adorn his character; but you will allow me to dwell for a few moments upon that particular virtue which has led him to this place, and which will long continue to have a material influence upon the prosperity and improvement of this country. (Cheers.) Not a year has elapsed since I had the honour of meeting many of the persons now present in this room. I would ask you to consider how many have been the improvements, how great has been the progress in that time—short as it appears to be in one respect, but long if you measure it by the number of improvements in arts and manufactures—improvements effected by the discovery of new principles, and the still greater application of old principles to objects of art. This has been the result, no doubt, of the general spread of enlightenment, improvement, and activity of mind, founded upon many causes, and prevailing throughout the country; but all this activity of

mind, all this exertion, would be either wasted or delayed, were there not some focus, some central attraction, around which the luminous bodies may revolve, capable of communicating and diffusing their light to every place in every country. (Applause.) I would ask you, how could this centre of attraction be furnished in a stronger degree, and exercise a more powerful influence, than has been done by His Royal Highness in being induced to place himself at the head of this Society, in immediate and familiar connection with every branch of science, and in communication with the heads of every department of art? (Applause.) I feel that I need say no more, for I am sure that you agree with me that it is from this disposition so frequently evinced, and never more effectually and usefully evinced than on this day, that you are indebted—I will not say for the cause and creation of such a spirit in the country—but for the mode in which it has been accelerated in its pace and brought to act in perfect unison and harmony, deriving with science, and art with art, and all deriving benefit from his patronage, and advantage from his countenance. (Applause.) I beg to propose, therefore, that you now vote your thanks to His Royal Highness for his attendance here this day, and for his conduct in the chair.

LORD COLBORNE, in rising to second the motion, said: Ladies and Gentlemen,—I think, after the speech to which you have just listened, it would be out of place for me to occupy your time for more than a few minutes. I am sure there is no one here this day who is not fully aware of the assistance and support which His Royal Highness gives to every work of art and science—not only in knowing and fully appreciating them, but from the kind way in which he takes up these objects, and the judgment he shows in regard to them. I am sure that all present must feel the deepest gratitude for the way in which he supports this and kindred Institutions. I shall not say more, therefore, but content myself with confirming the remarks and seconding the Resolution of my noble friend. (Applause.)

The Resolution having been unanimously agreed to,

HIS ROYAL HIGHNESS PRINCE ALBERT said: I thank you most sincerely for the kind expressions which have fallen from your lips on my behalf, and for the kind manner in which they have been received. I must confess that these expressions of kindness on the part of the assembly make me blush. In coming here this day to give the Prizes which the Society have awarded, I have only performed my duty as President of the Society,—and the performance of a duty is at all times a pleasure to me. (Applause.)

The proceedings then terminated.

APPOINTMENT OF SECRETARY.

ON Saturday last the 11th inst., the Council had interviews with the various candidates for the office of Secretary, and after considering their respective testimonials and the statements which they had made, the Council unanimously agreed to select Peter le Neve Foster, Esq., formerly Treasurer to the Society, and to place his name on the List for election, as Secretary, at the ensuing General Meeting on the 6th of July.

ADVERTISEMENT DUTY.

THE Council of the Society of Arts desire to call the attention of the Institutions in Union to the following amended Resolution, put forth by the Chancellor of the Exchequer, relative to the Advertisement Duty:

"For or in respect of any advertisement contained in or published with any Gazette or other Newspaper, or any other periodical paper, or in or with any pamphlet or literary work," 6d. is to be imposed.

The Council have determined in the interests of the Union, to represent to the Chancellor of the Exchequer, as forcibly as they can, the evil effects which must be produced by a tax on a class of advertisements hitherto exempted. The Council have forwarded to the Chancellor of the Exchequer the general Resolution as to the fiscal restrictions on Paper, Advertisements, News, and Foreign Books, carried unanimously at the recent Conference. They now invite the Institutions to follow up the convictions then expressed, and to lose no time in exerting their influence, so that the burden of fiscal restrictions upon the cheap supply of information may, at least, not be increased. The Council purpose to lay their views on this subject before the Chancellor of the Exchequer, not only by memorial, but by deputation. The attention of the Institutions is directed to the importance of making these representations, which must, of course, be of an entirely non-political character, as weighty as possible. Circulars have been addressed to Publishers, asking for their co-operation.

NOTICE TO INSTITUTIONS.

The Council has great pleasure in announcing that General Sir Charles Pasley has placed at their disposal for distribution among the Institutions in Union a limited number of copies of his treatise, entitled "Complete Course of Practical Geometry." It is requested that those Institutions who desire to possess copies of this work will apply to the Secretary of the Society of Arts immediately, that they may be included in the parcel to be forwarded next week.

Mr. L. Levi has also placed at the disposal of the Council a number of copies of the Report of the meeting held on 17th May, in the London Tavern, for the formation of a Mercantile College in the City of London.

TRADE COLLEGES.

THE following tabular view of the course of study pursued at the College for Trade and Industry, at Amsterdam, will be read with interest:

I.—THE TRADE SCHOOL.

Third Class—First Year.

Language	Geometry
History	Natural Philosophy, and
Geography	Chemistry
Arithmetic	Writing and Drawing
Algebra, Arithmetical and Geometrical Proportions, Logarithms	

Second Class—Second Year.

Mercantile Arithmetic	phy, Practical Chemistry
Book-keeping	Knowledge of Commercial
Coins, Weights, and Measures	Articles
Trade Terms, Counting-house Customs, &c.	History
Applied Geometry	Geography and Ethnology
Applied Natural Philoso-	Drawing

First Class—Third Year.

History of Trade	Elements of Zoology, and
Marine Commerce, Rules of Exchange	Botany
Trade Corporations, Banking, Partnership, &c.	Elements of Technology
Rudiments of the Theory of Trade, Politics	Dutch, and other Languages
Principles of Government	Dutch History
	Astronomy

A—Classes for Merchants.

Theory of Trade and Politics	Commercial Treaties, Duties, &c.
Law	Elements of Exchange, Monetary Systems, Banking
Trade Statistics of Holland	Knowledge of Articles of Commerce
National Economy	
Consideration of Dutch Trade in relation to other Countries	

B—Classes for Intending Colonists.

Language, Geography, and Ethnology of Dutch Colonies	Technology
Analytic and Applied Chemistry	Agriculture in General, especially that of the Tropics
Mineralogy and Geology	Navigation
Zoology and Botany	Topography and Geodesy
	Medicine

C—Classes for Supercargoes, Agents, etc.

The Chief Foreign Languages	Botany and Zoology
The Marine and Commercial Laws of Foreign Countries	Technology
Applied and Analytical Chemistry	Ship Book-keeping, Ship Measurement
Mineralogy and Geology	Ship-building
	Navigation
	Agriculture

D—For Ship-agents, Ship-brokers, Underwriters, etc.

The Marine and Commercial Laws of Foreign States	Ship-building and Management of Ships
Navigation	The Doctrine of Chance, as applied to Insurance, etc.

E—Dry Merchants, etc.

In addition to the preceding.

Zoology and Botany	Mineralogy and Analytic Chemistry
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II.—THE INDUSTRIAL SCHOOL.

Fourth Class.—First Year.

The instruction is similar to that given to the Third Class in the Trade school.

Third Class.—Second Year.

Algebra	Practical Chemistry
Geometry	Mechanics
Descriptive Geometry	Mineralogy and Geology
Applied Natural Philosophy	Botany and Zoology
	Book-keeping

Second Class.—Third Year.

Algebra, to the commencement of the Differential and Integral Calculus	Mechanics—Statics; Hydrostatics; and the Elements of Dynamics
Higher Geometry	Technology
Descriptive Geometry	Manufactures
Practical Chemistry	Architecture
Natural Philosophy, mathematically treated	Geography and Ethnology
Applied Geometry	Elements of Astronomy

First Class.—Fourth Year.

Differential and Integral Calculus	Building Materials
Mechanics—Dynamics	Descriptive Geometry
Hydraulics	The Calculation of Probabilities
Architecture, mathematically treated	Topography and Geodesy
Elements of Marine Architecture	Medicine
	Industrial Economy
	Industrial Jurisprudence

PROPOSED BIRMINGHAM AND MIDLAND INSTITUTE.

BIRMINGHAM, with upwards of 200,000 inhabitants, with vast industrial resources, and great commercial energy and intelligence, possesses no Literary or Scientific Institution commensurate with the requirements of the town and district. To supply this want, the outline of a comprehensive scheme was adopted at an influential Meeting, held on the 10th of January, 1853, under the presidency of the Mayor of the Borough. Since that time a Committee, then appointed, has been actively engaged in devising the means of accomplishing the design.

It is proposed that the Institute shall consist of two Departments: one a GENERAL DEPARTMENT; the other, SCHOOLS OF INDUSTRIAL SCIENCE. Under the former head will be embraced—1st, *The Literary Branch*; comprising general and reference Libraries, Reading Rooms, accommodation, as far as may be practicable, for the Literary Societies of the town, and Lectures on subjects kindred to this branch; 2nd, *Museums*; 3rd, *a Collection of Mining Records*; 4th, *Lectures on general scientific subjects*; 5th, *Periodical Meetings* for the reading and discussion of original communications, upon the plan of the Sections of the British Association; and 6th, *a Gallery of Fine Arts* for the reception of examples of Painting and Sculpture.

The other department will be a SCHOOL OF INDUSTRIAL SCIENCE, the Members of which will be provided with Systematic Lectures and Class Instruction in the various branches of Science, with especial reference to their particular occupations; and will also partake of the more important advantages of the General Department. The Lectures will include Chemistry, as applied to the various Manufactures and Agriculture, Mechanics, Metallurgy, Mineralogy, and Geology, Ventilation of Mines, and Mining Engineering. The education of our Artisans, Practical Miners, and others, in the scientific principles of their daily avocations will thus become a primary object of the Institute.

The MUSEUMS, common to both departments, will be divided into three distinct heads. The *first* to be principally devoted to Geology, Mineralogy, their economic application, and such parts of Natural History as illustrate these Sciences; also, those animal and vegetable productions used as raw materials in Manufactures. The *second* will be devoted to Manufactures, particularly those of the District, comprising Specimens of Articles in their different stages of process, and finished Articles of different dates and countries. The *third* will include Models and Specimens of Machinery, Tools, Furnaces, and other instrumental means and appliances used in the various Manufactories.

The Committee is engaged in making arrangements for associating the SCHOOL OF DESIGN with the new Institute, free of all charge, by which greater facilities will be afforded, and increased accommodation given for more successfully attaining its object. This will enable the Committee to place the Building of the Society of Arts, in New-street, at the disposal of the SOCIETY OF ARTISTS, for their Annual Exhibition of Pictures, and will afford them the opportunity of more completely developing their proposed educational plans.

An important feature in the proposed Institute is its *permanence*. This will be secured by the building being vested in the Corporation as trustees in perpetuity, thus giving to the Donors a guarantee for the stability of the Institution to which they are invited to contribute.

The Committee state that the advantages to be derived from the establishment of such an Institute are as

follows:—The MUSEUMS will be of the greatest utility to persons engaged in the Arts and Manufactures; to the Ironmaster, by the exhibition of the different kinds of Ores and Iron, and Models of Furnaces and Machinery used in different parts of Britain, America, and the Continent; to the Architect and Builder, by the exhibition of Building Materials, with records of their cost and durability; and to the Manufacturer, Designer, and Modeller, by the exhibition of Raw Materials, and of Finished Articles, remarkable for their artistic beauty, novelty of construction, or excellence of workmanship. The collection of MINING RECORDS will be of peculiar value in this district, by affording information as to the position of old Workings, and the situation and peculiarities of the Strata in which the Minerals occur. The concentration of the two Branches in one Institution will afford the means of obtaining Lectures of a higher order than could be accessible to either Branch separately; and the Classes of Industrial Science will confer an important benefit in placing within the reach of the Pupils a knowledge of the scientific principles involved in the various departments of Manufactures and Art.

MANUFACTURE OF PAPER FROM COW-DUNG.

BY GEORGE LLOYD, M.D.

ATTRACTED to the subject of paper-making by an accidental circumstance, and aware of the very great variety of vegetable substances that have from time to time been proposed to be so employed, and of those which are actually in use, wholly or in part, as substitutes for the costly "filthy rags," I was induced to make trial of the fibre derived from some of our common grasses. Reflecting, too, upon the condition of the fibre of the flax plant having undergone all the destructive chances and changes during a course from the living plant to the almost decayed fragment of rag, and contemplating the wonderful tenacity and endurance of the fibre in resisting the destructive agency of all the repeated mechanical and chemical operations to which it is subjected up to the period of its becoming fair linen cloth, and afterwards, through the incessant action of wear, and the no less destructive operations of the laundress,—and the transition through the rag-bag to its committal to the paper-mill, in which the fibre is finally resolved into extreme tenuity; and observing that the fibre of many plants passes uninjured through the alimentary canal of the cow,—I concluded that the straw of the flax plant might be advantageously employed in the manufacture of paper, having previously yielded a considerable amount of nourishment as food for cattle, which in the ordinary treatment of the plant is entirely wasted. I accordingly instituted some experiments, both in the use of flax-straw as food for cattle, and in the conversion of the same straw, after its passage through the alimentary canal, into paper.

Assuming the straw of the flax plant to contain the same nitrogenous elements as the seed-vessels, it appeared probable that when cut into chaff, and mixed in varying proportions, either with the chaff of certain grasses, selected for their strength of texture, as common dog's-tail grass (*cyenosurus cristatus*), or with that of common hay, it would, in the process of mastication and digestion, yield a considerable portion of flesh-making nutriment; and by the same natural process all, or the greater part of the soluble matter, being thus separated, the pure fibre would remain in the excreta, which being retained in convenient receptacles under the feeding-stalls or boxes, which should be "boarded," or perhaps half-boarded, and the liquid portion being

separated by pressure, after a certain degree of dilution with water, would be preserved as manure to be returned to the soil.

We have thus at command a natural and most economical "rag-engine" for the separation and comminution of the fibre in the jaws and teeth of the ruminant machine—a series of macerating vessels in the stomachs and alimentary canal in which the soluble matters are detached and removed, not as waste, but destined not only to keep in repair the machine itself, but by increase of weight to add most materially to its value.

As the present purpose is not so much to treat of the feeding qualities of flax-straw or of the value of the liquid portion of the excreta thus obtained for the purposes of manure, but rather to show that an useful and economical paper can be made from the solid portion, it will be sufficient to state that in the experiments undertaken last year, the nutritious properties of the flax-straw were very evident, notwithstanding the increased time and labour in chewing the cud of such tough material demanded; and with respect to the value of the liquid manure nothing need be added to the remark that its qualities will of course greatly depend upon the nature of the food from which it is in part derived; so that whatever be the value of flax-straw when so used as compared with other substances, the value of the excreta as manure will be in the same proportion. One remark may, however, here be made with respect to the money value of the straw, which to cultivators is of prime importance. A good crop of flax such as spinners would give the best price for, would be too valuable for a farmer to use as food for cattle only, and even in reference to the ultimate use of the fibre when freed from the soluble nutritive matter for paper-making in the manner here proposed, the cost might perhaps be too great at present; but the quality of straw that would be of the highest value for making yarn would not be that which would be preferred for food, and for paper-making the inferior would in all probability be quite as useful. It is a common complaint of persons attempting to grow flax in new districts that they cannot find a market for it, and consequently many have been deterred from growing this plant by having no use for it, nor being able to sell it advantageously. Now though the cultivators of flax generally will not be able to derive the full advantage of the proposed novel use of the straw by becoming paper-makers, yet it may oftentimes induce them to decide in favour of its cultivation to know that both the straw and seed may be used profitably as food, and that an irregular or "ragged" crop which would be of comparatively little value to sell to the flax-spinner, would still prove remunerative to the grower.

The liquid portion of the cow-dung having been separated by mechanical pressure, and conveyed into tanks to be from thence distributed upon the land, the solid matter undergoes a washing in water, and is then subjected to the action of steam in closed vessels; it is afterwards allowed to macerate in water for some days (the length of time varying according to the atmospheric temperature) so as to admit of a certain degree of fermentation, and again washed, by which means the fibre is more perfectly freed from adventitious matter, which being present not only deteriorates the colour of the paper, but greatly interferes with its quality in strength and softness. In this state it may be regarded as in the condition of what the manufacturers call "half-stuff," and so far the work of the rag engine has been performed by the living machine; and the material is bleached by means of some of the ordinary compounds of chlorine to whatever extent may be desired.

The bleaching accomplished, the "stuff" is ground in water by the ordinary engine into "pulp," and manufactured into paper in the usual way.

EQUATORIAL MOTION FOR TELESCOPES.

BY JOSEPH HOPKINS, OF WORCESTER.

HAVING taken out a patent for "a mode of obtaining a straight line parallel to the earth's axis, or of making the axis of a tube or the axis of a telescope parallel thereto," which, amongst other purposes, may be applied to the construction of sun-dials, by which minute portions of time might be marked, or to the production of equatorial motion in a telescope, without the preparatory aid of levels or divided circles, and without the usual preliminary requirements of a knowledge of the latitude and direction of the meridian, I am anxious to lay before the Society the application of the principle to an instrument which may perhaps be not inaptly named "The Portable Observatory."

Upon a common tripod telescope-stand a brass tube is so mounted as to have a horizontal and a vertical motion, each of which may be clamped, so that the direction of the axis of the tube being once determined, its position may be rendered permanent. The tube is five inches in length; if now at one end of it were inserted an eye-piece, in the centre of which was drilled a hole, about one-tenth of an inch in diameter, and at the other end an object cover, with a central circular aperture of the diameter of one-fourth of an inch, the eye of an observer, on looking through the smaller of these apertures, would take in a field of view the circumference of which would be equal to that of the circle which Polaris apparently describes round the true polar point; and if by the requisite horizontal and vertical motions these circumferences be made to coincide, their centres will also coincide, and the axis of the tube will be parallel to the earth's axis.

The coincidence here spoken of may be nearly enough obtained, where a plain tube only is used, by viewing the Pole Star on that part of the circumference of the circular diaphragm nearest to the constellation Cassiopeia; but as in the instrument now brought before your notice a small telescope is used, the axis of which is to be made parallel to the earth's axis, I shall proceed to show the mode of obtaining this parallelism.

On the outside of the tube of the small telescope are two circular rings, which are carefully ground and fitted into collars in the brass tube; the axis of the telescope is then made to coincide with the common axis of these collars, and the centre of its diaphragm is made coincident with this axial line, the diameter of the diaphragm being such as to give a field of view to the telescope of $2^{\circ} 57'$, being double the North Polar distance of Polaris.

A brass sector is made to move round the upper part of the brass tube at right angles to it, carrying an index with two small perforations through which, when the stars E and ξ , Ursa Majoris, are seen by the observer,—the eye taking in at the same time the field of view of the small telescope, the position to which Polaris must be brought on the circumference is pointed out by the line of light seen through the index.

As a test of the correctness of its place thus found, turn the small telescope about its axis in the collars of the tube, when through an entire revolution of the telescope the star should continue to cling, as it were, to the same point of the circumference of the diaphragm. The axis of the collars of the tube being thus made parallel to the earth's axis, we remove the small telescope and

sector, insert the axis, which is fastened by clips to the larger telescope, and fitted by rings of bell-metal into the collars of the tube, attaching to it the Right Ascension circle with its clamp. It is evident, that to whatever height the telescope be elevated, if it be turned about this axis it will move in planes parallel to the Equator; and if it be directed to a star, a motion given to it from east to west by the hand, or by a Hook's joint, will serve to keep the object in the field of view.

I have chosen, however, to give motion to the telescope by the action of a floating syphon, the weight carried by the float being connected with the right ascension circle by a cord clamped in one of its grooves. The upper edge of this circle is exactly 24 inches in circumference, the lower edge 25 inches nearly; the former having a proportion to the latter equal to that of the sidereal to the mean lunar day. Each of these circumferences is grooved to the same depth,—the thickness of the cord should be double the depth of the groove.

The large cylindrical pan is about 18½ inches in diameter; it contains in a depth of 12 inches, 95·7 pints. This quantity of water should be run off by the syphon in twelve sidereal hours. The rate (which should be adjusted while the telescope is in motion) is obtained by raising or lowering the syphon by the rack and pinion, till it delivers one gallon in one mean solar hour, or one pint in 7½ minutes.

The rate thus adjusted, if the motion of a star is to be followed, place the cord in the upper, if of the moon, in the lower groove of the right ascension circle, and let it hang by the small plummet over the pulley, fixed to one of the legs of the stand.

The telescope directed to the object, the cord clamped and the syphon in action, no movement of the instrument will take place till the cord is so stretched as to overcome the friction of the collars in the tube; we therefore turn the milled head at the upper edge of the pan, which, by opening the stop-cock, causes the floating weight to sink rapidly; this motion being stopped when the object appears in the centre of the field of view, the action of the syphon alone will cause it apparently to remain stationary.

I wish it to be distinctly understood, that the instrument now submitted to your notice was designed to show (independently of its application to the production of equatorial motion) the methods by which an extended wire, the axis of a tube, or the axis of a telescope, might be made parallel to the earth's axis, to a sufficient degree of exactness to make it available for astronomical observations.

Other simpler forms might be adopted where one telescope only need be used, or a telescope and its finder; the latter having a field of view of 2° 57' might be so mounted as to produce the equatorial motion required.

Where very powerful telescopes are used, the smaller one by which the polar axis is determined might have a field of view of 3°, and the exact position of the Pole Star near its circumference might be determined by a micrometer adapted for the purpose; this would admit of the requisite corrections for refraction. As differences in the temperature of the water occasion some little variation of rate in the quantity delivered by the syphon; the rack-work should be graduated for these differences or self-regulating clepsydras may be constructed, either by using two cisterns and two syphons (one of the latter acting as a supply-pipe to the cistern carrying the float); or if one cistern only be used, by a thermometer carrying a piston attached to the syphon, the bulb of the thermometer being fixed under the lower surface of the float.

If the telescope be not well balanced about its centre

of gravity, more or less weight will be required to move it as its direction is varied. If, however, the float cover a large surface of water, and the syphon when adjusted for the mean temperature be at some depth below this surface, no perceptible variation of rate would be occasioned.

The action of the clepsydra produces a smoothness of motion not to be surpassed; and I feel assured it might be adapted to the requirements of an Observatory.

JOSEPH HOPKINS.

LOCAL LECTURE ASSOCIATIONS.

THE following papers, showing the mode in which the North-west Hants Lecture Association is managed, are well deserving of consideration. The Association has been formed by the Hon. and Rev. Samuel Best, of Abbott's Ann, Andover, who acts as Secretary, and who, by his local influence and energy, is fast collecting the materials for a most useful and powerful association:

RULES.

1. The object of this Association is the promotion of Lectures on scientific and literary subjects in village schools and reading-rooms.

2. The range of the Association shall comprise North-west Hants, or the districts included in the Kingsclere, Andover, Basingstoke, Stockbridge, and Whitchurch Unions, and immediately adjoining parishes.

3. The Members shall be those who desire to promote the object of the Association by the delivery of Lectures, or by subscribing towards the expenses. They must be elected by the Committee.

4. Members shall be divided into two classes—Lecturers and Subscribing Members; 12. annually shall be the subscription of a Subscribing Member. Honorary Members may be elected by the Committee.

5. The arrangements for each season shall be made at a Meeting, held at such time and place as a Committee, consisting of five Members and an Honorary Secretary (chosen annually for the management of the Association), shall appoint.

6. The subscriptions shall be devoted in aid of the objects of the Association, or appropriated to the purchase of diagrams, charts, books, or papers for the use of Lecturers. These shall be the property of the Association, and be deposited with the Secretary for the use of the Members.

7. The Association contemplates lectures in Village Schools and Reading-rooms otherwise unsupplied, and as much as possible on the principle of mutual assistance; a Lecturer's School or Reading-room being entitled to one lecture gratis, for every lecture given. It is not, however, intended to exclude either villages or towns having no resident members, on a payment of 10s. annually in villages, or 12. in towns, being made towards the general fund; nor to interfere with the freedom of any member lecturing elsewhere.

(Form of Circular Letter.)

DEAR SIR,—Under the impression that it is very important to provide for carrying on the course of Education commenced only in the School-room, and of assisting those who are desirous of carrying out a system of self-instruction; will you allow me to draw your attention to the enclosed copy of Rules, and to ask your co-operation? The great difficulty of the Lecturer is often the want of illustrative Diagrams, while that of the Institute or Reading-room is a succession of Lecturers to occupy the appointed evenings of the season. In the

desire to supply both of these wants the Association, whose Rules I forward you, has originated.

Leaving every Institution at perfect liberty to carry out its own views on its own conditions, it will be the object of the Association simply to assist its efforts by arranging for the supply of Lecturers, and providing Diagrams &c. for their use.

I beg to subscribe myself,

Very faithfully yours,

Secretary.

ELECTRIC TELEGRAPH IN BRITISH INDIA.

THE following particulars relative to the rise and progress of the Electric Telegraph in India, are given by Dr. O'Shaughnessy, in the prefatory notice to his little treatise on this subject.

"A brief sketch of the measures connected with the construction of the Electric Telegraph in India, will form the most appropriate introduction to this 'Manual of Instructions.'

"In April and May, 1839, the first *long* line of Telegraph ever constructed in any country, was erected by the writer of these pages in the vicinity of Calcutta. The line was twenty-one miles in length, embracing 7,000 feet of river circuit. The experiments performed on this line, removed all reasonable doubts regarding the practicability of working Electric Telegraphs through enormous distances; a question then, and for three years later, disputed by high authorities, and regarded generally with contemptuous scepticism.

"It is never too late to acknowledge an obligation. In the experiments then carried on, I received the warm aid and support of Dr. Wallich, then Superintendent of the Botanic Gardens of Calcutta, now Vice-President of the Royal Society of London.

"One terminus of the line was placed in his house. All the resources of his establishment and library were held at my disposal. He saw at a glance the marvellous future which these and simultaneous experiments in other countries foretold; and with his high name he protected the experimenter from much of the derision which his attempts excited in the community of Calcutta.

"The experiments having been completed, and their results published, the line was taken down.

"In 1850, a despatch from the Court of Directors to the Government of India, recalled attention to the subject. The Government addressed the Military Board of Bengal, and reports were called for by the Board, from Lieut.-Col. Forbes, of the Engineers, and from myself.

"On these reports, dated December, 1850, being placed before Government, an experimental line of telegraph, half subterranean, half overground, and thirty miles in length, was directed to be constructed.

"This line was commenced in October, 1851, and opened to Diamond Harbour, in December of that year. In the following May, a branch was led to Moyapore. In August and December it was extended to Kedgerie, eighty miles distant by the line followed; and in March, 1852, the rivers Hooghly and Huldee were crossed, and the line from Calcutta to the sea opened for official and public correspondence.

"These results, having been duly reported, were under the consideration of the Supreme Government of India, when hostilities commenced in Burmah. The services of the telegraph were thus brought into instant and practical requisition, and its incomparable capabilities tested with complete success. The "Rattler," steam-

frigate, bringing intelligence of the first operations of the war, had not passed the flagstaff of Kedgerie, on the 19th of April, when the news of the storming and capture of Rangoon was placed in the hands of the Governor-General in Calcutta, and posted on the gates of the Telegraph-Office, for the information of the public.

"On the 14th of April, 1852, Lord Dalhousie, as Governor of Bengal, laid before the Government of India a long and deeply-interesting Minute, in which his Lordship proposed the construction of lines from Calcutta to Agra, to Bombay, to Peshawur, and Madras; and the Deputation of the author of this Manual to England, to give evidence before the Court of Directors, and assist in the dispatch to India of the requisite materials and stores.

"I left India on the 3rd of May, 1852, and reported my arrival at the India House on the 20th of June. On the same day I had the gratification to hear from the Chairman of the Court of Directors, Sir James Weir Hogg, that the Governor-General's propositions, which arrived *via* Marseilles on the 14th, had been already sanctioned by the Court of Directors, and approved of by the Board of Control; and that a despatch from the Court was already on its way to India, in reply to the Governor-General's letter.

"Such rapidity in the dispatch of an important measure is, perhaps, without a parallel in any department of Government. All subsequent steps were taken with proportionate speed. The requisite contracts were issued for all the stores, before the 1st of August. Sixty enlisted artificers were placed in training at Warley; an inspection of the home and foreign telegraph lines undertaken and completed by the 15th of November; collections made of all the instruments in use in Europe and America: these pages prepared for the guidance of the persons to be employed on the works in India; and voluminous reports, with estimates and drawings, submitted from time to time on every step of these proceedings.

"The accompanying list of the materials and instruments ordered on the 1st of August, 1852, will show the enormous scale on which the operation was sanctioned, and the rapid rate in which the preparations have been made:

	Tons weight.
Iron rod, No. 1 galvanised, 5-16th inch; weight per mile, $\frac{1}{2}$ a ton; length, 5,600 miles	2,800
Iron screw piles, 46,000, each 76 lbs.	1,560
Gutta percha covered copper wire, 700 miles.	
Iron wire, galvanised, No. 8, 500 miles	100
	Number.
Oak Brackets	48,000
Galvanised wrought iron caps	48,000
Binding screws for ditto	48,000
Stoneware insulators	96,000
Galvanised screws for ditto	96,000
Straining-machines	20
Wire straightening ditto	sets
Gutta percha tool-chests	of
Sets of sundry tools	each.
Telegraphic instruments and samples of stores, &c., from all English offices; also from America, France, Baden, and Prussia.	
Electric clocks, printing presses, turning lathes, wire drawing-machines, and silk covering, taping, and ribbing machines; from Hopkinson and Cope, London; Whitworth and Co., Manchester; Holtzapffel, London; Shepherd and Son, London; Mr. Physick, of London; &c., &c.	

"Of all the above stores, and many others not included, there was not a single item manufactured or procurable on the 1st of August, 1852."

FREE LABOUR—COTTON AND SUGAR.

On Wednesday evening a lecture was delivered at the London Coffee-house, Ludgate-hill, by Mr. Bourne, on the subject of the Production of Cotton and Sugar by means of Free Labour. Mr. Palmer, barrister, took the chair.

Mr. BOURNE said the object of his lecture was to show that an adequate supply of sugar and cotton might be obtained, the result of free labour, from our West India Colonies. The greater portion of the lecture was devoted to prove, that the great requisite in the West India colonies was, the adoption of an improved system of draining by means of the draining plough—and he referred to the successful experiments which had been made in the island of Demerara. He referred also to the report of Dr. Shear, in support of his opinions, and to the petitions which had been signed by some of the most successful planters, and by some of the most eminent merchants in the West Indies, for the application of the Drainage Act. The old system of draining compelled it to be done by means of manual labour, which was incompatible with cattle labour, and the improved system of agriculture. He had himself resided for a number of years in the West Indies, and from his official experience, could speak with confidence on the subject. Were the sugar planters able to adopt the improved system of drainage, he felt confident that most of the difficulties they laboured under would be removed. The value of the drainage plough might be judged of by the fact that four horses, two ploughs, and corresponding implements, would lead to a saving of fifty negroes, and three times the amount of the present returns would be secured with little or no extra cost. By means of improved drainage there would be no difficulty in producing a supply of cotton sufficient to drive the slave labour out of the market. The colony would, besides, be made much healthier, and the cost of provisions be so reduced as to induce emigration, and a sufficient supply of free labour. In conclusion, he alluded to the monstrous evils of the slave system, and to the deep interest which, upon every ground, the people of this country had in entirely destroying it.

The CHAIRMAN said, with reference to a suggestion thrown out by Mr. Bourne, for the convening of a large meeting to consider the subject, he was of opinion that such a measure would be attended with success. He also thought that Mr. Bourne was well-deserving the thanks of the meeting for the lecture he had delivered.

Mr. DENON then moved a vote of thanks to Mr. Bourne for the able and instructive lecture he had delivered.

Mr. EDGAR, who had been for some time a resident in Kaffirland, seconded the resolution, and in doing so, said the Kaffirs would be easily induced to cultivate cotton, as the climate was well suited to it, and they were very anxious to obtain the manufactures of England.

The Rev. Mr. WARD, a gentleman of colour, having said a few words as to the interest which all classes in this country took in the abolition of slavery, the motion was agreed to.

A committee was then appointed, with power to add to their number, to consider what means should be taken for carrying out the plan proposed by Mr. Bourne and to report to a future meeting.

Thanks were then given to the chairman, and the business terminated.

HOME CORRESPONDENCE.

CHRONOMETERS.

SIR,—I should not have noticed Mr. Loseby's letter but for the last sentence in it, in which he rather triumphantly asks which of my opinions I intend to be believed,—that expressed in my Exhibition Report, that his invention for compensating balances was the best; or that which I expressed the other night, that Dent's and several others are better than his.

I thought I had explained that point sufficiently, in Mr. Loseby's hearing; and I certainly gave him credit for being prudent enough not to invite me to give a still more public explanation of it. However, as he asks for it, he shall have it.

When I wrote the Report, I said his secondary compensation was "probably the best," because I believed it was, merely from the fact of his chronometers having been most frequently the first in the Greenwich trials. And if Mr. Loseby had been quiet, I should probably have remained in the same belief till now. But as he thought fit to express his indignation in several ways at the Jury not having distinguished his chronometers from all others in the world by a council medal, I was led to examine the Greenwich lists a little more closely, for the purpose of ascertaining the actual amount of superiority of his invention over others for the same purpose. And then I found, to my surprise, that the supposed superiority disappeared altogether when properly examined; and that (as I explained at the meeting a fortnight ago,) his chronometers had *never once been first in that particular respect for which his invention was designed*, and for which he has been bothering the Admiralty for a public reward for the last four or five years.

Mr. Loseby knows that in the very set of Parliamentary Papers of 1849, out of which he has picked what suits his purpose, there is a report from the Astronomer Royal to the Admiralty against giving him a reward, on the two grounds that his invention was not the first for the purpose, and that Mr. Airy saw no reason why one at least of those previously invented, viz., Dent's, should not answer quite as well, as in fact it has, and better. In 1850, and again in 1852, he made another attempt upon the Admiralty; and still failing in his object of getting a reward, he got copies of his applications moved for, as a sort of Parliamentary advertisement. And then for the first time came out that division of the Greenwich lists into cold, mean, and hot periods, which I had communicated to Mr. Dent; and which, as it would never have been *made* but for Mr. Loseby's complaints of his ill-treatment by the Exhibition Jury (or by me individually, if he prefers it), would never have been *published* but for his complaints of the Admiralty and the Astronomer Royal not duly appreciating the importance of his invention.

Of those calculations I do not intend to say any more. Mr. Loseby may make out as many Tables as he pleases to prove something else: he cannot alter the fact which that division of the trials into cold, mean, and hot periods of two months each clearly shows; viz., that his chronometers do not keep the same rate in the three periods so nearly as those of several other makers. And I will add this further remark: the general success of Mr. Loseby's annual chronometer at Greenwich is evidently due to the care and skill which he bestows on the getting up of that one instrument, more than to his

peculiar method of compensation, since he is never the first in respect of compensation; and therefore it is further evident that if he bestowed the same attention on a chronometer with one of the other kinds of compensation, he could make it beat his own still more decidedly; or, to put it the other way, if Mr. Loseby's compensation was generally adopted for chronometers made with only the average amount of care and skill, it would probably fail very decidedly as compared with several other methods now in use.

As I observe also a letter from Mr. Wenham on glass balance-springs, I take this opportunity of giving greater publicity to the remark, that if they answer at all, the necessity for either Mr. Loseby's or anybody else's contrivances for secondary compensation is at an end, on account of the exceedingly small primary compensation required by glass springs; and I must say that the violent denunciations of glass for balance springs which we heard the other night seemed to me to have just as much foundation in experience as the equally violent denunciations against cast iron for the wheels of turret clocks, which the same set of gentlemen indulge in whenever they have an opportunity—without much success.

Your obedient Servant,
E. B. DENISON.

GRATUITOUS LECTURES.

Montpellier House, Brighton, June 11th, 1853.

Sir,—The very interesting Debate on Lectures and Class Instruction which took place at the Rooms of the Society of Arts, on Thursday last, is likely, I think, to produce a feeling of discouragement in the minds of those who, not being professed lecturers and teachers, have been, and are now, flattering themselves that their endeavours to extend information to the masses by these means are not altogether worthless. In their earnest desire to recommend trained teachers and lecturers, the Institutes Committee, and many of the Delegates from Literary and Mechanics' Institutions, threw cold water enough on *Miscellaneous Lecturing* and untrained teachers, to quench the zeal of all except the most ardent; and in so doing, were, in my opinion, guilty of great injustice to a very large number of philanthropic gentlemen who have mainly contributed to the promotion of national intelligence, and on whose exertions the country has *chiefly* to depend.

I am convinced that it is very far from the intention of the Society of Arts to produce any relaxation of the efforts of voluntary unprofessional lecturers and teachers, and I was anxious to elicit a distinct recognition of their value from the Conference; but so many gentlemen had opinions to express, that I found it impossible to get a hearing. As the representative of an Institution (the Brighton Mechanics' Institution), which has been wholly sustained for three years by these means, and as a Vice-President of the Brighton Literary and Scientific Institution, which has been maintained in like manner for twelve years, having received between 200 and 300 miscellaneous lectures, delivered to audiences varying from 100 to 400 persons, I feel justified in requesting that you will admit this word of appeal to the sympathies of the Society for a class of fellow-labourers in the cause of National Education; the value of whose services should not be under-rated, because they are given without fee or reward, and for which the Society of Arts is not prepared to provide any substitutes.

Yours, &c.,
H. STEIN TURRELL.

LECTURERS.

13th June, 1853.

SIR,—At the Conference the other day, during the long discussion which took place on the subject of Lectures, nothing was said on behalf of the Lecturers, as to the manner of their reception on visiting Institutions in the country to deliver their Lectures.

They are men of enlightened minds and accomplishments, more or less imbued with special and general science or literature, and worthy of being received and entertained in a courteous and a generous spirit; but is this always done with the hospitality to which they are fairly entitled? I fear not.

In the course of conversation with these gentlemen, they have occasionally mentioned to me, with the expression of sentiments of regret and disappointment, that on visiting Institutions in the country to deliver their Lectures, that they have been allowed to seek for shelter and refreshment in solitude at an inn,—of course at some expense,—have given their Lecture, received their fee, and been allowed to take their departure from the town without any of the civil attention which might have been expected from the Managers of the Institutions.

The little Institution with which I am connected, from its commencement, fifteen years ago, has never allowed any of these gentlemen, with one exception, by his own choice, to go to an inn. They have always been received and hospitably entertained at a private house during their stay, and have given and received additional pleasure by participating in the proceedings of a *soirée* or *conversazione*, occasionally held after the Lecture, and on taking leave have expressed their willingness to come again, if requested.

Permit me, Sir, therefore to suggest, that gentlemen coming to Lecture to Institutions in the country should not be allowed to incur any expense during their stay; but some one or other of the Committee of Management should have the pleasure of receiving and entertaining the gentleman who does them the honour and the favour of promoting the edification and entertainment of the Members, by imparting to them what he knows on given subjects, and widening among them the boundaries of knowledge.

I remain, Sir, yours, &c.,
SURRIENSIS.

PROCEEDINGS OF INSTITUTIONS.

SOUTHAMPTON.—The Annual Meeting of the members of the Polytechnic Institution was held on Wednesday evening, H. Clark, Esq., M.D., the President, in the chair, when a report was presented from the Committee of its proceedings during the past year, showing the number of members at present on the books to be 515, being an increase on the year of 39; 244 persons having joined the Institution, and 205 having left it. During the past year there had been an increased attendance at the news-room, for which a larger supply of papers was much needed. The opening of the news-room during the day, could it be effected, would be highly appreciated by the members, and would be of great advantage to the Institution. The demand for books at the library had very much increased, the average number in circulation being about 365. During the past year, from purchases and gifts, about 130 volumes had been added to the library, exclusive of the reports, books, and pamphlets, received from the Society of Arts, amounting in number

to about 25. In consequence of the lease of the building now occupied by the Institution terminating at Michaelmas, 1854, the Committee had turned their attention to the subject of obtaining a new building. The effort towards effecting that object, commenced about three and a half years since, was rendered of no avail in consequence of the bequest of the late Mr. Hartley to the Corporation; but as there had been, and still continued to be, difficulties in the way of obtaining possession of this money, and as it was doubtful whether it could be so appropriated as to render it available to the purposes of the Institution, the Committee felt it to be the duty of the members to act accordingly. They had experienced much difficulty in finding a piece of ground which would be sufficiently large for the purpose, and eligible in point of situation; but there was, however, one site offered them which they considered suitable, and which was sufficiently large to enable them to erect a building which would comprise a lecture theatre capable of containing 1,800 or 2,000 persons, with news rooms, library, museum, and other accommodation suited to the purposes of a large and flourishing Institution; and in conclusion they urged upon the members the propriety of directing the Committee about to be appointed to turn their immediate attention to this subject, which was of vital importance to the welfare of the Institution. The accounts showed the Institution to be in a much better financial position than last year. The following officers were elected for the ensuing year:—President, Dr. Clark; Vice-Presidents, Messrs. Stebbing, Pond, Norrington, and Sims; Treasurer, Mr. Mosely; Secretaries, Messrs. W. Wakeford and W. Weston; Curators, Messrs. Bostock and A. Hillier; Superintending Librarian, Mr. A. Barton; Committee, Messrs. Geddes, Falvey, R. Lankester, H. J. Buchan, Bickers, Dyer, Norman, G. Sharp, J. C. Cox, E. Booth, Wilkinson, Harrison, Levy, Gubbins, and Dr. Marshall.

VENTNOR.—The Annual General Meeting of the members of the Literary and Scientific Institution was held on Friday evening last, J. Weston, Esq., Vice-President, in the chair. The report showed a considerable increase in the number of members, and, notwithstanding the unusually large outlay during the past year, a very satisfactory state of things financially. The following were elected officers for the ensuing year:—Committee, Messrs. G. Jewell, J. Jolliffe, D. Day, W. S. Dodd, B. Bull, J. Newman, T. Bull, W. Bull, T. Butler, E. Bell, F. Trueman, A. Muggridge, W. Bush, H. Cornell, J. S. Keatley; Auditors, W. Ellis and C. Dear; Treasurer, J. Burt.

WHITTINGTON CLUB.—A general meeting of the members of this Club was held on Wednesday evening, for the purpose of considering its present condition, and of taking such steps as might place it upon a permanent and enduring basis. Mr. Mechi having been called to the chair, said, that he met the members that night in better spirits with regard to the welfare of this club than he had on a former occasion, when he saw many things relating to its finances which were of a very disheartening character; but that now, having read the Report of the Committee appointed to investigate the whole of their affairs, he was exceedingly gratified to find that they had reported in a manner highly creditable to themselves, and highly advantageous to the club. They should bear in mind that there were certain fixed expenses which they would have to meet, no matter how few or how numerous might be the subscribers—such as rent and taxes. If, therefore, they wished to succeed, they should bear in mind that it was necessary

for them to procure for it a certain number of subscribers. Mr. C. Lushington proposed the first resolution, to the effect that the Whittington Club and Metropolitan Athenæum, from the physical, moral, and social benefits it confers on its members and the public, is an Institution worthy of continued and energetic support. In doing so, he dwelt upon the advantages of the Institution, as a vehicle of education to such young persons as are employed during the day; and regretted the apathy which allowed it to dwindle, and become jeopardized. Mr. Hannen seconded the resolution, which was unanimously adopted. Mr. Maguire then moved, and Mr. Peacocke seconded a resolution to the effect—“That the results of the investigation of the Committee appointed to inquire into the affairs of the Club were calculated to inspire confidence in the future stability of the Institution.” Upon this resolution several gentlemen spoke, after which it was unanimously agreed to. The forming of the club arrangements were afterwards considered, and several gentlemen having offered their opinions upon it, the proceedings terminated with a vote of thanks to the Chairman.

TO CORRESPONDENTS.

Notice.—Members, and others, who can furnish or obtain original information or suggestions on the subjects included in the Society's Premium-list, or other topics connected with the Society's various departments of operation, are invited to communicate the same to the Secretary, in as condensed a form as possible, for the purpose of being either read and discussed at the evening meetings, or inserted in the Society's weekly Journal. Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

Members of the Society who do not receive the JOURNAL regularly, are requested to give immediate notice to the Secretary; and, in order to prevent mistakes, they are particularly requested to signify any change which they desire to have made in their address, with as little delay as possible.

Country Institutions.—Correspondents who are so good as to send reports of proceedings of Local Institutions, are requested to forward them immediately after the Meeting to which they refer, and not later than Tuesday morning, if intended for insertion in the following Friday's Journal.

“W. R.” would be glad to know where he can find an account of the testing of Trotman's Patent Anchor, as to strength and other qualities.

MISCELLANEA.

CASTS FOR THE NEW CRYSTAL PALACE.—Some packages have arrived by a steamer from Hamburg, containing casts for the New Crystal Palace at Sydenham. These packages were of such extraordinary size and weight that it was found to be impracticable to land them at any one of the ordinary wharfs or quays used for the landing and deposit of goods from abroad, and it was therefore found to be necessary, with the sanction of the proper authorities, to land them at Greenwich, where the necessary means was found to exist, in order that they might immediately be landed, and safely removed to their destination.

PROPOSED GREAT INDUSTRIAL EXHIBITION FOR SCOTLAND.—Our readers have already been informed, through our reports of the Town Council proceedings, as well as the proceedings of the Convention of Royal Burghs, at its late Meeting, that a movement has been set on foot for getting up an Industrial Exhibition for Scotland in our city. A Committee has, we observe, now been formed for carrying out the proposal, who have succeeded in acquiring the option of a central and adequate site on the Calton Hill, which combines, along with the object of an Exhibition, that of completing a great national edifice. We understand that for this purpose it is proposed to complete the National Monument in a temporary style, but so as to correspond in appearance with the section of the edifice already erected. Should this design be accomplished, one interesting object at least will be effected; the public will have presented to them an entire model, on a scale equal in point of size to the original, of the Parthenon of Athens, universally admitted to have been one of the noblest works of Grecian art, but now so sorely dilapidated by time that its ruins may be supposed to present but a feeble idea of its original magnificence. We understand that the Lord Provost and Magistrates of Perth, the Provost and Magistrates of Ayr, the Provost of St. Andrew's, the Provost of Airdrie, the Provost and Magistrates of Queensferry, the interim manager of Kilrenny, &c., have already signified their approval of the undertaking; and that a contractor has expressed his readiness to undertake the execution of the work at an expense of 12,000*l.*, and to rely for payment of half the expense on the receipts.—*Scotsman.*

ARCHITECTURAL MUSEUM.—This Museum, the object of which is to bring within the reach of every one practically engaged in architecture, and more especially in the revival of ecclesiastical architecture, a collection of casts taken from the best authorities, English and foreign, of sculpture, effigies, mouldings and ornaments, rubbings of sepulchral brasses, tracings of stained glass and mural paintings, pavement tiles, and even original work, where the removal might not be a spoliation; also metal-work, seals, and minor objects of the best periods of Mediæval art. An extensive and rapidly-increasing collection has been formed, and is in course of arrangement in a suitable building taken in Cannon-row, Westminster, where objects of large dimensions may be conveniently deposited in chronological order, thus presenting an opportunity of recalling to memory the rich detail of the objects once visited; to the workman, a new means of improving his taste, of which from his inability of visiting original works he has been hitherto deprived; and to the amateur, the luxury of indulging his love of art by contemplating the finest works of the best periods. To render the Museum as useful as possible, there is attached to it a class, for the study and practice of architectural carving, decorative painting, metal-work, and other subjects connected with architecture; and it is intended to open the Museum in the evening to enable workmen to avail themselves of the only time at their disposal for the purpose of improvement. Arrangements are also in progress for giving a series of lectures on Art Workmanship, to be illustrated by the casts and specimens in the collection.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Par. No. *Delivered on 7th June, 1853.*

- 340. Committals (Ireland)—Return.
- 561. Trade and Navigation—Accounts.
- 567. Bill—Parish Vestries.

Delivered on 8th June.

- 369. Statistical Papers (India)—Return.
- 430. Saint Patenas Churches—Returns.
- 539. Court of Chancery (Ireland)—Accounts.
- 544. Metropolitan and City Police—Returns.
- 553. Great Boughton Union—Correspondence.
- 568. River Tyne—Copy of Instructions.
- 575. Bill—Common Lodging-houses.

Delivered on 9th June.

- 449. Harwich Election—Report from Committee (a corrected copy.)
- 508. Army Commissariat and Ordnance—Accounts.
- 570. Ventilation and Lighting of the House—Report of Committee.
- 414. Muddersfield Election—Minutes of Evidence.
- 574. Bills—Tenants' Improvements Compensation (Ireland), as amended by the Select Committee.
- 578. „ —Bankruptcy (Scotland), amended.
- Dublin University Commission—Report.

Delivered on 10th June.

- 514. Schools and Scholars—Return.
- 533. Poor Law—Return.
- 560. East India—Home Accounts.
- 558. Justices of the Peace, &c.—Abstract of Return.
- 556. Indian Territories—Third Report from Committee.
- 511. Dockyard Appointments—Report and Evidence.
- 478. Office of Speaker—Report from Committee.

Delivered on 11th and 13th June.

- 306. River Tivy—Copy of Report.
- 521. Cork Election—Report from Committee.
- 550. Ramsgate Harbour—Report of Capt. Vetch.
- 579. Bills—Sheriff Courts (Scotland), as amended by Select Committee.
- 593. „ —Savings Banks.
- 594. „ —Savings Banks' Annuities.
- 510 (a). „ —Succession Duty Schedule.
- 586. „ —Expenses of Elections (amended).
- 592. „ —Public Works Loan.
- 601. „ —Excise Duties on Spirits (as amended in Committee, and on re-commitment.)
- 602. „ —Customs Duties (amended.)
- Loan Fund Board of Ireland—Fifteenth Annual Report.

Delivered on 14th June.

- 475. Bills for Murder (Ireland), &c.—Abstract of Return.
- 437. Nisi Prius Officers—Return.
- 546. Sweets or Made Wines—Returns.
- 549. Northern Lighthouses—Abstract of Accounts.
- 559. Herrings—Abstract Return.
- 582. Wine and Spirits—Account.
- 591. Bill—Government of India.
- Army—Statistical Reports on Sickness, Mortality, &c.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 10th June, 1853.

Dated 17th May, 1853.

- 1218. S. and J. Eccles—Power-looms for figured weaving.

Dated 25th May.

- 1275. W. Babb—Hair trimmings.
- 1277. W. Birch—Improved sight for cannons.
- 1279. F. Russell—Raising and lowering window shutters, &c.
- 1283. S. S. Hall—Preventing carriages running off rails. (A communication.)
- 1285. W. E. Newton—Generation of steam. (A communication.)

Dated 26th May.

- 1288. A. Porecky—Umbrellas, &c.
- 1289. T. Singleton—Looms.
- 1291. G. Simpson—Weighing-machines.
- 1292. W. Raester—Central action buffers, and spring guides for traversing rods.
- 1293. C. Cowper—Iron manufacture. (A communication.)
- 1294. W. Warecup—Springs for carriages.
- 1295. A. R. Le Mire de Normandy—Regulating pressure of steam.
- 1296. J. Saunders—Railway and other wheel tyres.
- 1297. T. Westhorp—Oakum.
- 1298. W. J. Harvey—Fire-arms.
- 1299. J. Box—Supply of steam-boilers. (A communication.)
- 1300. W. Weatherly and W. Jordan—Stuffing-boxes.
- 1302. J. A. Roth—Machinery for treating fibres of flax, &c. (A communication.)

Dated 27th May.

- 1303. W. Henham—Ploughs.
- 1304. S. Shipley—Cases for shaving-soap, &c.
- 1305. C. Arnoux—Locomotives.
- 1307. J. L. Stevens—Furnaces.
- 1308. A. Keiller—Confections and comfits, known as "Pan goods."
- 1210. W. H. Bentley—Locks and keys.

Dated 28th May.

- 1311. J. Butterfield—Looms.
- 1315. R. A. Brooman—Abdominal supporters. (A communication.)
- 1316. C. Hill—Stays.
- 1317. F. Francillon—Dyeing and printing, &c.
- 1318. D. Bateman—Carding wool, &c., and manufacture of cards.

1319. C. Binks—Manufacture of chlorine, &c.
1320. W. W. Marston—Breach-loading fire-arms.
1323. A. W. Sanderson—Effervescing powders.

Dated 30th May.

1327. J. Macdonald—Lamps and lighthouse signals, &c.
1328. F. W. Wymer—Raising and lowering ships' boats.
1329. J. Bernard—Obtaining differential mechanical movements.
1331. J. C. Bothams—Condensing steam-engines.
1333. J. G. Appold—Screw propeller.

Dated 31st May.

1334. W. Brookes—Stoves and grates.
1335. W. F. Shoebridge—Drain-pipes.
1336. G. Goodlet—Engines worked by steam, air, or air and water combined.
1338. W. E. Newton—Hand-stamp. (A communication.)

Dated 1st June.

1339. J. Morris—Envelopes for needles.
1341. A. Hardwick—Propelling.
1342. T. Aitkin—Steam-boiler furnaces.
1345. M. Scott—Propelling.
1346. J. Stocks—Looms.

APPLICATIONS WITH COMPLETE SPECIFICATIONS FILED.

1347. Earl of Dundonald—Apparatus for laying pipes, and juncture of same. June 1st, 1853.
1376. Lieut. J. J. Kerr—Cartridges. June 4th, 1853.
1400. T. Davis—Manufacture and piling of iron for railway chairs. June 7th, 1853.

WEEKLY LIST OF PATENTS SEALED.

Sealed 2nd June, 1853.

Year, 1852 :

931. William Keld Whythead, of 69, Cornhill—Improvements in steam-engines and steam-boilers.

Sealed 8th June, 1853.

Year, 1852 :

995. John Harrison, Robert Harrison, and Alexander Stewart Harrison, of Dromore, Down, Ireland—Improvements in machinery used in the manufacture of textile and other fabrics.
998. Donald Beaton, of Mile-end, and Thomas Hill, of Southampton—Improvements in the means of propelling ships and other floating vessels.
1002. James Spotswood Wilson, of Tavistock-place—Improvements in propelling.
1009. William Allchin, of Globe Steam-engine Works, Northampton—Improvements in agricultural and other steam-engines.
1014. Thomas Masters, of Oxford-street—Improvements in machinery or apparatus for cleaning knives and other steel articles.

Year, 1853 :

85. William Nairn, of South Inch Mill, Perth—Improvements in reeling yarns or threads.

Sealed 10th June, 1853.

Year, 1852 :

1020. Richard Archibald Brooman, of 166, Fleet-street—Improvements in evaporating apparatus. (A communication.)
1033. Charles Ritchie, of Hackney—Improvements in apparatus for measuring fluids.
1067. Charles James Willis, of Clarendon-chambers, Handcourt, Holborn—Improvement in machinery for amalgamating, mixing, and grinding substances together.
1076. John Healey, of Bolton-le-Moors—Invention for the application of glass and enamel to the flyers and other parts of machinery used in the preparing, spinning, doubling, winding, warping, dressing, and weaving of cotton, wool, flax, silk, and other fibrous materials.
1140. John Moore Hyde, of 1, Quay, Bristol—Improvements in steam-engines, and the production of steam for the same.
1204. Julius Singer, of Mabledon-place, Burton-crescent—Improvements in wearing-apparel.
1211. James Lord, of the Inner Temple—Improvements in carriage-steps.

Year, 1853 :

96. John Walker Wilkins, of Hampstead—Improvements in electric telegraphs, and in the instruments used in connection therewith.
145. Georges Edouard Gazagnaire, of Marseilles, and 16, Castle-street, Holborn—Improvements in the manufacture of nets for fishing and other purposes. (A communication.)
209. Casimir Noël, of Paris, and 16, Castle-street, Holborn—Invention of a new regulating bit.
238. Lewis Jennings, of Fludyer-street, Westminster—Invention of an improved construction of lock.

Sealed 11th June, 1853.

Year, 1852 :

1028. Archibald White, of Great Missenden, Bucks—Improvements in apparatus for retarding and stopping railway trains.

Sealed 13th June, 1853.

Year, 1852 :

1037. Joseph Hamblet and William Dean, of Oldbury, Worcester—Improvements in the manufacture of bricks.
1042. Jules Lejeune, of Auteuil, near Paris, and 16, Castle-street, Holborn—Invention of a new machine for washing house-linen, and all kinds of textile articles that are employed in making them.

Sealed 14th June, 1853.

Year, 1852 :

1059. Joseph Paul Mare Floret, of Paris, and 16, Castle-street, Holborn—Invention of an improved method of producing simultaneously gas-light and lime or plaster.
1973. André Cointry, of Nantes, France, and 16, Castle-street, Holborn—Improvements in the manufacture of bread and biscuits.
1098. George Thomson, of Dalston—Invention of a machine for cutting wood.
1110. George Lingard, of Birmingham—Improvements in taps and apparatus connected therewith, for admitting air to beer and other liquors under draught.
1141. Alfred John Hobson, of Walsall—Invention of a new or improved metallic bedstead.
1143. Alexandre Deutseh, of Paris—Improvements in treating oil of Colza and other similar oils.

Year, 1853 :

456. Edwin Stanley Brookes, Joseph Black, George Stevenson, and William Jones, of Loughborough—Improvements in machinery for the manufacture of looped fabrics.
763. Christopher Nickels, of York-road—Improvements in weaving narrow fabrics.
827. William Radford, of Buckingham-street, Lieut. R.N.—Improvements in the construction of metallic beams or bracings and metallic sheets or plates, applicable to the building of ships and other structures where lightness and strength are required.
857. Herbert Taylor, of Mark-lane—Improvements in ornamenting surfaces or fabrics, applicable to various useful purposes, such as for covers of furniture, imitation tapestry, carpets, or hangings. (A communication.)
874. Henry William Harman, of Northfleet Dockyard—Improvements in steam-engines.
883. John Smith, of Bartholomew-close—Improved mode of suspending carriage-bodies.
884. Alfred Vincent Newton, of 66, Chancery-lane—Improvements in steam-boilers, and in the mode of supplying the same with water. (A communication.)
389. Thomas Edwards, of Islington Foundry, Birmingham—Improvements in steam-engines.
929. William Walker Stephens, of Edinburgh—Invention of the application of retorts in gas-ovens or other ovens, and of gas-ovens or other ovens which are constructed as retorts, to the process of improving iron, and converting iron into steel.
962. Henry Carr, of East Retford—Improvements in the construction of railways.
996. Isaac Brentnall Sheath, of Birmingham—Improvements in fire-arms.
1017. George Critchley, of Cheltenham—Improved apparatus for regulating the heat and supply of water in hot water apparatus.
1026. William Frederick Thomas, of Porchester-terrace, Bayswater—Improvements in apparatus for sewing or stitching.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
June 10	3473	"La Renommée" Shirt.	Peter Tait	Limerick, Ireland.
" 11	3474	Oriental Silk Preserver, for Ladies' Work-Tables.	Henry Olden	Birmingham.
" 12	3475	The Heat-conductor, for self-acting Ranges.	Frederick Edwards	42, Poland-street, Oxford-st.
" 15	3476	Improved Pressure Pump, applicable to be fitted on board Emigrant or other Ships, or any other situation where a Fire-engine may be required.	Alfred Sharland and James Gotley	Baldwin-street, Bristol.